

## Chapter: 6 Application of Derivatives

- 1) Find the rate of change of the area of a circle with respect to its radius  $r$  when  
(a)  $r = 2$  cm      (b)  $r = 9$  cm.
- 2) If the height of the cone is constant then find the rate of change of its curved surface area with respect to its radius.
- 3) Show that  $f(x) = x^3 - 6x^2 + 12x - 18$  is increasing  $f''$  on  $R$ .
- 4) Find the equation of the tangent and normal to the curve  $y^2(a+x) = x^2(3a-x)$  at  $x=a$ .
- 5) Find the approximate value of  $\sqrt{399}$
- 6) The radius of a cone is twice of its height and the radius is 10 cm. If there is an error of 0.01 cm in measure of radius, then find the approximate error in calculating its Volume.
- 7) Find maximum and minimum value in  $f(x) = x^3 - 9x^2 + 15x - 1$
- 8) misc: 5, 9, 10, 11, 16.